

# Formation of recommendations for the selection of types of connections for different types of crossroads based on the generalized imitation model

*Aleksandr Novikov*<sup>1,\*</sup>, *Sergey Eremin*<sup>2</sup>, and *Andrei Kulev*<sup>1</sup>

<sup>1</sup>Orel State University, 302026 Orel, Komsomolskaya st. 95, Russian Federation

<sup>2</sup>Krasnoyarsk City Administration, 660049 Krasnoyarsk, Karl Marks str., 93, Russian Federation

**Abstract.** The paper deals with the issues of the transport network imitation modeling. Preliminary the authors analyzed the main modeling systems, which include Aimsun, MATSim, Anylogic, PTV VISUM and others. All these instrumental tools have the ability to form an arbitrary structure of the transport network. The research showed, however, for the small sections of the street road network (SRN), such as the crossroad, the Anylogic system is more efficient and makes it possible to parameterize the model, which can be used to model various structures of the crossroad. In this regard, the paper proposes a generalized model of the crossroad and, based on its modeling, gives recommendations for choosing the type of crossroads at different intensities of traffic flows.

## 1 Introduction

In recent years, the Russian Federation has begun the widespread use of transport models which allow predicting traffic intensity more accurately.

As a rule, when forming programs for the development of the street-road network (SRN), the principle remains the same – in accordance with the forecast, the calculated traffic intensity is accepted, which is the rationale for the parameters of the roadway.

In other words, the reconstruction of the streets usually implies the expansion of the roadway, or its preservation in the previous parameters in case of impossibility of its expansion.

Herewith, new streets are designed with a margin of bandwidth, based on its growth. At the same time, the increase in traffic intensity is taken as a fact that does not imply any impact on this process in the design framework. As a result, the development of SRN is carried out under conditions of an uncontrolled increase in traffic intensity and does not take into account feedback.

The basis for modeling traffic flows is software and tools (Aimsun, MATSim, Anylogic, PTV VISUM and others) that allow creating a SRN structure, characteristics of vehicles, as well as the parameters of their movement in the system [1-10]. So, there is the

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\* Corresponding author: [novikovan57@gmail.com](mailto:novikovan57@gmail.com)















The generated recommendations can be used in the design of the road network of cities and regions in order to eliminate the most important problems of traffic, increase communication speed and safety of participants in the transport process.

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